# Systems Software Developers



### DOES THIS DESCRIBE YOU?

**Work Interests** involve descriptive categories (compatible with Holland's Model) attributed to success in this career:

- Conventional Enjoy following set procedures and routines developed through higher authority; includes working with data and details more than with ideas.
- **Investigative** Involves working with ideas requiring an extensive amount of research, fact finding, problem solving, and thought analysis.
- **Realistic** Involves work activities that include practical, hands-on problems and solutions; often dealing with plants, animals, and real-world materials like wood, tools, and machinery.

**Work Styles** depict worker characteristics conducive for this career:

- Attention to Detail
- Analytical Thinking
- Dependability
- Initiative
- Adaptability/Flexibility

**Work Values** are associated with aspects of work that provide satisfaction in this career:

- Achievement—Sense of accomplishment; results oriented.
- **Recognition**—Advancement potential.
- Working Conditions—Job security; good working conditions.

**Aptitudes** reflect an ability to acquire skills and knowledge for success in this career:

- Oral Comprehension
- Written Comprehension
- Oral Expression
- Deductive Reasoning
- Inductive Reasoning

## **Occupational Profile**

#### **OVERVIEW**

Research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications. Set operational specifications and formulate and analyze software requirements. May design embedded systems software. Applies principles and techniques of computer science, engineering, and mathematical analysis. Belongs to the Information Technology career cluster and Network Systems and Programming and Software Development career pathways.

### SKILLS & KNOWLEDGE NEEDED

#### **Basic Skills**:

- Reading Comprehension
  - Active Listening
    - Speaking
    - Critical Thinking
- Complex Problem Solving

#### **Technology Skills:**

- Development Environment Software
- Object or Component Oriented Development
  - Software
  - Operating System Software
  - Program Testing Software
  - Web Platform Development Software

#### Knowledge:

- Computers and Electronics
- Engineering and Technology
  - Mathematics
  - Telecommunications
    - Design

Sources (including additional requirements): <u>https://www.careerkey.org/choose-a-career/holland-personality-types.html#.WUOAGOvyuJA</u>; https://www.onetonline.org/; and <u>https://www.iowaworkforcedevelopment.gov/career-exploration-resources</u>

#### **ESTIMATED & PROJECTED EMPLOYMENT**

	2014	2024	2014-24	Annual	Total
	Estimated	Projected	Employment	Growth	Annual
Occupational Title	Employment	Employment	Change	Rate (%)	Openings
Total, All Occupations	1,795,100	1,949,240	154,140	0.9	58,145
Computer & Mathematical Occupations	33,550	39,630	6,080	1.8	1,140
Software Developers, Systems Software	2,790	3,220	430	1.5	85
Source: https://www.iowaworkforcedevelopment.gov/occupatio	nal-projections				
2017 WAGE & SALARY (\$)					
	Moon	Moon	Entres Ent	Ev.	n Fwn

	Mean	Mean	Entry	Entry	Exp	Exp
Occupational Title	Wage	Salary	Wage	Salary	Wage	Salary
Total All Occupations	20.93	43,539	10.09	20,991	26.35	54,813
Computer & Mathematical Occupations	35.88	74,629	21.29	44,287	43.17	89,800
Software Developers, Systems Software	42.91	89,261	30.16	62,727	49.29	102,528

Source: https://www.iowaworkforcedevelopment.gov/occupational-employment-and-wages

#### **EDUCATION & TRAINING**

Education	Work Experience	Job Training
Bachelor's Degree	None	None

Many employers desire applicants possessing a bachelor's degree (and in some cases an advanced degree) in a related field, such as computer science, software engineering, or information systems.

Sources: https://www.iowaworkforcedevelopment.gov/occupational-projections and https://www.bls.gov/emp/ep\_education\_training\_system.htm

#### NATIONAL CAREER READINESS CERTIFICATE (NCRC)

Skill	Median Skill Level	Minimum Skill Level	Maximum Skill Level
Applied Mathematics	4	4	6
Locating Information	4	4	5
Reading for Information	5	5	5
Applied Technology	n.a.	n.a.	n.a.
Business Writing	4	3	4
Workplace Observation	4	4	4
Listening for Understanding	3	2	3

An ACT assessment-based credential issued in determining essential work skills needed for employment success across industries and occupations. The greater the score, the greater the skill level (Bronze = 3, Silver = 4, Gold = 5, Platinum = 6 & higher). Source: http://www.act.org/content/act/en/products-and-services/workkeys-for-employers/assessments.html

#### **ADDITIONAL SOURCES:**

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#### PRIMARY INDUSTRY SECTORS

(Where are Systems Software Developers Employed?) Computer & Electronic Product Mfg Professional, Scientific, and Technical Services Credit Intermediation Agriculture

Source: https://www.iowaworkforcedevelopment.gov/occupational-projections

